

"Public Health is Purchasable. Within Natural Limitations any Community  
can Determine its own Death-rate."

Vol. IX]

[No. 1

# QUARTERLY REPORT

OF THE

MYSORE STATE DEPARTMENT OF HEALTH

JANUARY—MARCH, 1937

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*Director of Health.*



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**"Search for the Truth is the noblest occupation  
of Mankind, its publication a Duty."**



TO  
SUPPLYING OFFICER  
MYSORE

9- AUG 1937

# QUARTERLY REPORT

## OF THE MYSORE STATE DEPARTMENT OF HEALTH

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### GENERAL.

During the quarter an extensive prevalence of cholera was reported with 1,845 attacks and 992 deaths, of which 1,009 attacks and 573 deaths were reported from the Mysore District. A special staff of six Sub-Assistant Surgeons was sanctioned in Government Order No. G. 6621-3—P. H. 90-36-21, dated 3rd March 1937, for organising preventive measures. All the Sanitary Inspectors and the Vaccinators in the area were used for assisting the inoculating staff and for a systematic chlorination of all the drinking water sources. The shandies, fairs and festivals in the infected localities were stopped under orders of Government.

It may be mentioned in passing that the Mudukathore Jatra in Mysore District and Mahadeshwara Betta Jatra in Coimbatore District were held on February 15, and March 10, respectively, at which pilgrims from both the sides of the border congregated. The extensive spread of infection immediately after the latter Jatra needs to be investigated. The occurrence of the disease in epidemic proportions had, however, been forecasted months in advance and for the first time attempts were made to establish inoculation depots along the frontier routes leading to Mahadeshwara Betta Jatra in Kollegal Taluk.

Under Government Order No. G. 5676-7—P. H. 61-36-5, dated 5—9th February 1937, a sum of Rs. 2,000 has been sanctioned for improving the collection of models and health exhibits. A permanent health museum in Mysore City is being fitted.

Government Order No. G. 6807-8—P. H. 96-36-2, dated 12th March 1937, approves of the continuance of the anti-malaria operations in the Irwin Canal area till the end of June 1938.

T. A. B. and cholera vaccines prepared at the Public Health Institute, Bangalore, will be supplied to Government Institutions and to private parties at the rates noted below as per Government Order No. G. 6188-9—P. H. 73-36-2, dated 10—18th February 1937.

			Rs.	a.	p.	
T. A. B. Vaccine :—						
(a) Prophylactic	...	...	0	2	0	per c.c.
(b) Therapeutic	...	...	0	2	0	„
Cholera Vaccine :—						
5 c.c. bulbs	...	...	0	6	0	
10 „ „	...	...	0	11	0	
20 „ „	...	...	1	9	0	
30 „ „	...	...	2	4	0	

Notification No. G. 7654—P. H. 10-35-17, dated 29th—31st March 1937, extends the provisions of the Mysore Prevention of Adulteration Regulation IX of 1921, to Seringapatam Town in respect of buffalo and cow milk, butter and ghee.

Government Order No. L. 4977-80 —Ml. 13-36-58, dated 9 —13th January 1937, approves of the purchase of the Electrocution Chamber from Messrs. Hollard & Co., Electrical Engineers, Bombay, for the destruction of stray dogs in Mysore City at a cost of Rs. 890.

Under Government Order No. G. 6325-7 —P. H. 12-35-65, dated 18th—22nd February 1937, Mr. Ahmed Hussain, Honorary Assistant Engineer, is appointed Assistant Engineer of the Bureau of Sanitary Engineering in the vacancy caused by the death of Mr. E. B. Chinnappa.

During the quarter the Director of Health was out of headquarters for 28 days visiting 23 towns and 24 villages in the Districts of Mysore, Chitaldrug and Kolar in connection with the organisation of anti-cholera measures, inspection of sanitation, vaccination, water-supply, drainage, rural improvement, jatra sanitation, maternity and child-welfare work and hookworm campaign. He attended the meetings of the Trust Board of Mysore.

Mr. Carter of the Rockefeller Foundation visited Bangalore, Hiriur, Nagenhalli and Mandya in his malaria study tours.



**BUREAU OF ADMINISTRATION.****(a) City Health Organisations.****BANGALORE CITY.**

G. M. DOMINICK, M.R.C.S., D.P.H.,  
*Health Officer.*

In the quarter under report 41 attacks with 26 deaths from plague were reported and as a preventive measure 2,627 anti-plague inoculations were done. The incidence of small-pox was rather low and only 10 attacks were registered. A total of 2,104 primary and 1,677 re-vaccinations were performed. Cholera accounted for 48 attacks with 25 deaths. Of these, many were imported cases. The number of anti-cholera inoculations done was 2,953.

Under typhoid fever 10 attacks with one death were reported and 325 anti-typhoid inoculations were done.

During the quarter 872 stray dogs were destroyed.

The health staff inspected 28 eating houses, 8 aerated water factories, 106 coffee clubs and sweetmeat shops and 13 bakeries. Of 526 notices issued against sanitary offences, 242 were complied with.

The estimated number of unprotected children at the end of the quarter was 1,456.

Three cinema shows were held before an approximate audience of 1,000 persons.

The mosquito control work is described separately in the section under Epidemiology.

**MYSORE CITY.**

S. SESHAGIRI RAO, B.Sc., M.B.B.S., D.P.H.,  
*Health Officer.*

During the quarter 917 births and 919 deaths were reported. Of these 133 were deaths of infants under one year of age.

Under plague seven attacks and four deaths were reported; 336 anti-plague inoculations were done.

No case of small-pox was reported in the quarter under report; 3,960 vaccinations were performed.

As regards cholera, a few imported cases were reported early in January and immediately nearly three-quarters of the population of the affected locality, *viz.*, Narasimharaja Mohalla, were inoculated. Early in March, however, imported cases were reported coming from Mahadeshwara Betta Jatra in Kollegal Taluk. An inoculation depot was started at the bus stand and all persons coming from the Jatra were inoculated. During the quarter 318 attacks and 164 deaths were reported, of which 93 attacks and 52 deaths were indigenous and the rest imported cases. As many as 62,063 anti-cholera inoculations were done and the epidemic was quickly brought under control.

*Influenza.*—Twenty fatal cases were reported.

*Typhoid.*—There were 17 deaths reported under typhoid and 157 anti-typhoid inoculations were done.

*Dogs destroyed.*—A total of 653 stray dogs were destroyed.

One case of dog-bite was reported.

*Food Adulteration.*—Forty-three samples of food were analysed, of which 20 were found to be genuine and 23 adulterated. Of 19 prosecutions instituted 16 ended in conviction.

The restaurants, coffee clubs, hotels and tea shops in the City were inspected.

*Notices issued.*—Of 1,584 notices issued under the different sections of the Municipal Regulation, 192 were complied with and the rest were under disposal.

*Laboratory.*—At the Office Laboratory the following samples were analysed :—

<i>Samples</i>		<i>No. examined</i>	
1.	Water (bacteriological)	...	142
2.	Do (Chemical)	...	21
3.	Do (free chlorine)	...	82
4.	Sewage	...	77
5.	Rodents for plague	...	19
			(1 positive)
6.	Specimen for cholera	...	1
			(negative)
7.	Other samples	...	3
Total		...	345

*General.*—The Mohallas were inspected regularly for disposing of papers and to see to their proper sanitation. During the quarter 281 flush latrines were constructed.



## KOLAR GOLD FIELDS.

M. RAMACHANDRA RAO, B.A., M.B.B.S., C.P.H.,  
*Health Officer.*

During the quarter 1,092 births and 723 deaths were reported, the number of deaths under one year of age being 220.

Thirteen attacks and six deaths were reported under plague and as many as 2,223 anti-plague inoculations were done.

In the same period 17 attacks with 2 deaths from small-pox were reported and the number of vaccinations performed amounted to 1,671.

No case of cholera was reported in the period under report.

Typhoid accounted for 11 attacks with 11 deaths. Under whooping cough two attacks with two deaths were reported.

At the Office Laboratory the following samples were analysed :—

<i>Particulars</i>	<i>No. of samples examined</i>
Water	6
Smear for G. C.	8
Sputum for T. B.	15
Urine	28
Motion for hookworm	9
Liver and spleen for anthrax	19
Blood for malaria	13
Dead rat for plague	21
Motion for ova	2
Free chlorine test	4
Motion for cholera	4

During the quarter 86 wells were chlorinated, and 18 wells were hankanized.

Anti-rabic treatment was given in 7 cases and 334 stray dogs were destroyed.

A total of 2,116 houses were disinfected and 8,789 rats were destroyed.

The Health Officer and staff paid 255 visits to hotels, 178 to mutton and fish stalls, 197 to chakna stalls, 204 to coffee clubs, 14 to aerated water factories, 162 to bakeries 32 to markets and 32 to slaughter houses.

The estimated number of unprotected children was 420.

Two cinema shows were arranged at Robertsonpet and in the Mining Area.

During the quarter 78 notices against sanitary offences were issued, of which 5 were complied with, 23 were filed in court and 50 were pending disposal.

**(b) District Health Organisations.**

**MYSORE DISTRICT.**

M. G. SRINIVASA PEIDPET, L.M.S., B.S.Sc.,  
*Health Officer.*

During the quarter 62 attacks with 36 deaths from plague were reported; 5,679 anti-plague inoculations were done. Small-pox accounted for 29 attacks and 4 deaths; a total of 7,644 (5,863 primary and 1,781 re-vaccinations) vaccinations were performed.

But cholera appeared in an epidemic form, the number of attacks and deaths reported being 1,009 and 573 respectively. Many of these cases were imported from outside the State and a large number of anti-cholera inoculations amounting to 125,851 were done. The District Health Officer visited 40 villages and 26 towns in connection with cholera preventive work. Nine special duty Sub-Assistant Surgeons were employed for inoculation work and two Health Officers from the Central Office were deputed for special duty in this connection. The infection was largely prevalent in Maddur, Mandya, Malvalli, T.-Narsipur, Yelandur and Nanjangud Taluks. All the jatras and weekly shandies in the infected localities were stopped.

The work of the hookworm campaign is detailed under Epidemiology.

**SHIMOGA DISTRICT.**

G. N. SESHADRI, L.M.S., D.P.H. (Cal.),  
*Health Officer.*

In the quarter under report cholera prevailed in an epidemic form in 45 villages and 6 towns, the number of attacks and deaths reported being 337 and 179 respectively.



Vigorous anti-cholera measures were adopted and as many as 44,289 inoculations were done.

Plague accounted for 4 attacks with one death and 316 anti-plague inoculations were done.

Under small-pox 58 attacks and 7 deaths were reported; 5,290 primary and 2,431 re-vaccinations were done.

The District Health Officer visited 90 villages and towns during the quarter on epidemic work, vaccination verification and so on. He also visited one school and examined 14 children.

Five baby shows were held in Shakunavahalli, Channagiri, Anavatti, Iron Works, Bhadravati. Magic lantern lectures were delivered at these shows and in the villages selected for intensive work.

Leaflets on cholera were widely distributed.

## **BUREAU OF MATERNITY AND CHILD WELFARE.**

### **(a) State Organization.**

ERIKA DEUSSEN ROSENTHAL, M.D.,

*Organizer.*

The Organiser was on tour for 45 days during the quarter under review. She toured in Mysore, Bangalore, Kolar, Hassan and Kadur Districts and attended the baby show in Mysore City.

The following places were included in her itinerary—Gargeshwari, T.-Narsipur, Nanjangud, Siddlingapura, Belikere, Nagenhalli and Tandya in Mysore District; Kankanhalli, Krishnarajpetdoddi, Nelamangala, Kolar, Yerakalve, Vokkaleri, Hollur, Mallur, Devarayasamudram, Mulbagal, Nangli, Srinivasapur, Addagal, Bowringpet, Chintamani, Siddlaghatta, Chikballapur, Nandi, Chikmagalur, Mugere, Gonibid, Batemane (coffee estate) Saklespur, Kadur, Birur, Tarikere, Lakkavalli, Narasimharajapura, Koppa, Hariharapur, Seringeri, Sulebyle, Balehonnur, Hassan, Haranahalli, Jayachamrajpur (Hulkur), Arsikere, Hole-Narsipur, Dudda, Saklespur and Alur.

She gave 15 lectures and health talks at Malur, Srinivasapur, Adagal, Chintamani, Chikballapur, Arsikere, Chikmagalur, two lectures to the students of Maharani's

College, one health talk to the mothers of the Subrahmanyam Centre, Mysore, and another health talk to the mothers of Devaraja Centre in Mysore City.

She inspected the maternity and child-welfare centres in Mysore City, Bogadi, Bowringpet, Chikballapur, Nanjangud, Chintamani, Hassan and Tarikere.

Maternity homes at Kankanhalli, Narasimharajpur and Dudda were inspected. The maternity homes are under construction in Gargeswari, Yerkalve, Nelamangala and Lakkavalli.

Ante-natal and baby clinics were held in (1) Mallur Local Fund Dispensary, (2) Belikere Malnad Improvement Dispensary and (3) the Local Fund Dispensary, Arsikere. They were also held in (4) Child-welfare centre, Chikmagalur, (5) Child-welfare centre, Hassan, (6) Ante-natal and Baby Clinic, Bogadi, and (7) Subrahmanyam Centre, Mysore City.

The Organiser supervised the work of 20 midwives. Their kits were examined and their registers checked.

The Krishnarajendra Mills Nursery School, Chikmagalur Nursery School and Nursery School connected with the Mission Normal School, Bangalore, were inspected during the quarter.

The Organiser helped in the examination of babies at the Baby Show in Mysore City held in February 1937. She attended seven committee meetings.

The following factories were inspected during the quarter: (1) Rice Mill in Mulbagal, (2) All-India Mission Tablet Industry, Bowringpet, (3) Mustaffa Tannery, Kolar, (4) Government Porcelain Factory, Bangalore, (5) Sri Krishnarajendra Mill, Mysore, and (6) Mysore Tannery, Bangalore City.

#### (b) Voluntary Organisations.

The Executive Committee of the State Branch of the Indian Red Cross Society met on February 22. On February 26, the Annual General meeting for the year 1936 was held under the presidency of *Rajadharmaprabina Diwan Bahadur* K. S. Chandrasekhara Iyyer, B.A., B.L., Retired Chief Judge, High Court of Mysore. An important change in the personnel of the Executive Committee of the Branch was made, *viz.*, Sir Charles Todhunter, K.C.S.I., J.P.,



Chairman of the Branch for over ten years, resigned and *Rajamantrapravina Diwan Bahadur* K. Matthan, B.A., took over the duties of the Chairman.

The Municipal Council, Mysore, and the Ellen T. Cowen Memorial Hospital, Kolar, were elected as Members of the State Branch.

A sum of Rs. 938 being the balance at the credit of the account of His Majesty's Silver Jubilee Fund has been made available to the State Branch.

*Propaganda.*—The Red Cross films and propaganda materials were made over to the State Department of Health as it is proposed to combine Red Cross propaganda with that of the Health Department.

*Ambulance.*—Mr. N. S. Subba Rao, M.A., Bar-at-Law, Assistant Commissioner of the St. John Ambulance Brigade Overseas, No. 5 (Mysore District), resigned office and Mr. S. G. Sastry, B.A., M.Sc., F.C.S., was elected in his place.

Colonel James Sleeman, C.B., C.M.G., C.M.E., M.V.O., M.A., J.P., Chief Commissioner of the St. John Ambulance Brigade Overseas, visited the District in February and inspected the ambulance work done in the State. The All-State Ambulance Competitions were arranged for on the occasion and Colonel James Sleeman witnessed them and awarded the prizes.

*Junior Red Cross.*—The State Branch sanctioned a grant of Rs. 20 each for the four Primary Schools recommended by the Junior Red Cross Secretariat for developing instruction in personal hygiene. A sum of Rs. 20 was also sanctioned for similar work in the schools of Chamarajnagar Taluk.

*Maternity and Child Welfare.*—The following grants were sanctioned:—

	Rs.	a.	p.
1. Towards the equipment of Maternity ward at Anavatty ...	250	0	0
2. Towards the equipment of the combined Hospital and Child Welfare Centre at Nanjangud ...	500	0	0
3. Towards the equipment of the New District Hospital, Kolar ...	1,000	0	0
4. Towards equipment for village work undertaken by the authorities of Ellen T. Cowen Memorial Hospital, Kolar ...	400	0	0
	<hr/>		
	2,150	0	0

Applications for grants towards the construction of Maternity Homes and Child Welfare Centres received from the following places were considered and deferred as the schemes were incomplete :—

1.	Maradihalli	...	Hiriyur Taluk.
2.	Niduvale	...	Mudigere Taluk.
3.	Konanur	...	Hassan District.
4.	Magadi	...	Bangalore District.
5.	Satanur	...	Kankanhalli Taluk.
6.	Harohalli	...	do
7.	Gajanur	...	Shimoga District.
8.	Bhimankone	...	do
9.	Modikoppa	...	do
10.	Hulikal	...	do
11.	Lokikere	...	Chitaldrug District.
12.	Basavankote	...	do
13.	Bilikere	...	Mysore District.

The following applications for grants towards the salary of additional midwives to be appointed were considered and approved subject to full compliance with the terms of Government Order of November 20—24, 1936 :—

1. The President, District Board, Bangalore, for a midwife to be stationed at Tubagere.
2. The Deputy Commissioner, Hassan, for a midwife to be stationed at Kanakatte.
3. The President, District Board, Tumkur, for a midwife at Thovinakere.
4. The Deputy Commissioner, Tumkur District, for midwives at Gowdagere, Hulikunte and Baragur.

Requests for similar grants from the following were deferred pending receipt of concrete proposals :—

1. The President, District Board, Mysore, for the appointment of additional midwives at Kuderu, Belakavadi and Keragodu.
2. The Deputy Commissioner, Bangalore, for a grant towards the appointment of a midwife at Bagalur.
3. The Sub-Divisional Officer, Davangere, for a grant towards the salary of midwives to be appointed at Basavanakote, Chikjajur and Kondajji.

Arrangements have been made for visiting Narasimharajpura and Bogadi by the lady doctors at Koppa and Mysore respectively, the State Branch having agreed to bear their travelling allowances.



The State Branch sanctioned a grant of Rs. 15 per mensem towards the running expenses of the Nursery School at Nanjangud.

Messrs. T. B. Borajanna, Mohadeen Sab and Razak Sab have donated towards the construction of a Child Welfare Centre and Baby Clinic at Sira, and the foundation stone for the building was laid by the First Member of Council on February 25, 1937.

*Maternity and Child Welfare Centres in*

No.	Place	Name of Centre	No. of Clinics held		
			Ante-natal	Post-natal	Childrens
1	Bangalore ...	Beli-mut Creche ...	...	...	...
2	Do ...	Civic and Social Progress Association, Chamarajapet.	7	6	11
3	Do ...	Deena Seva Sangha, Malleswaram	...	...	...
4	Do ...	Mahila Seva Samaj, Basavangudi	...	...	...
5	Do ...	Child Welfare Centre, Military Area, Hebbal.	5	...	12
6	Do ...	Welfare Centre (Bangalore Woollen, Cotton and Silk Mills).	3	...	3
7	Channapatna ...	Maternity and Child Welfare Centre	...	...	..
8	Chitaldrug ...	Do do	...	...	...
9	Chikballapur ...	Do do	...	...	...
10	Chikmagalur ...	Do do	12	...	142
11	Devanhalli ...	Do do	...	...	...
12	French-Rocks ...	Do do	10	10	46
13	Hassan ...	Do do	12	...	12
14	Kolar Gold Fields	Do do	13	13	13
15	Mysore ...	Civic and Social Progress Association	4	...	6
16	Do ...	Vani Vilas Maternity and Child Welfare Centre, Vani Vilas Hospital.	23	...	13
17	Do ...	Gajasala Maternity and Child Welfare Centre.	...	...	...
18	Do ...	Sri Krishnarajendra Mills' Creche	...	...	...
19	Do ...	Sisuvihar (Toddler's School) ...	...	...	...
20	Do ...	Vocational Institute for Women (Toddler's School).	...	...	...
21	Do ...	Toddler's School in Gajasala Centre	...	...	...
22	Do ...	Do in Nanjaraja Bahadur Chattram.	...	...	...
23	Do ...	Do in Kantharaj Urs Chowk.	...	...	..
24	Do ...	Mallamma's Maternity and Child Welfare Centre.	...	...	...
25	Do ...	Devaraja Centre	...	...	...
26	Do ...	Savoy Maternity and Child Welfare Centre.	...	...	...
27	Do ...	Subramanyam Centre	...	...	...
28	Do ...	Sri Vani Vilas Milk Centre	...	...	...
29	Mandagadde ...	Mission Centre	13	13	13
30	Nanjangud ...	Maternity and Child Welfare Centre.	...	...	...
31	Shimoga ...	Ante-natal and Baby Clinic, Methodist Mission.	13	13	13
32	Do ...	Lady Mirza Ismail Milk Centre	...	...	3
33	Sivasamudram	Maternity and Child Welfare Centre	13	...	11
34	Tirthahalli ...	Mission Centre	...	...	...
35	Tumkur ...	Bathlur Baby Clinic, Methodist Mission.	...	...	11
Total ...			128	55	309



Mysore State. (October—December, 1936.)

No. of Cross examined								No. of Children that were			No. of House Visits paid		No. of deliveries attended
Prognant women				Children				Weighed	Bathed	Given milk	First vist	Re-visits	
First Examina- tion	Re-Examina- tion	No. Treated	No. referred to Hospital	First Examina- tion	Re-Examina- tion	No. Treated	No. Referred to Hospital						
... 9	... 7	...	...	66 9	66 ...	66 ..	...	66 40	66 40	66 40	... 270	... 270	... 5
...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	15	41	...	63	146	50	...	201	...	58	733	632	19
16	12	...	1	5	5	...	2	5	5	5	4	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	136	153	10	45	74	...	13	29	29	29	200	...	...
46	16	46	46	45	55	...	55	55	...	6	...	...	40
11	48	9	5	24	234	24	10	243	85	...	20	8	5
49	65	12	11	12	22	14	8	34	43	34	170	223	36
4	4	...	...	23	23	...	...	23	23	23	...	...	2
417	217	634	...	108	24	132	...	132	...	...	...	...	674
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...	...	...	...	...	...	...	...	...	...	...	...	...	...
142	331	321	10	130	320	440	10	400	...	...	4 visits by doctor 23 by helpers.		...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
142	331	321	10	130	320	440	10	400	...	...	4 visits by doctor 23 by helpers.		...
17	17	16	19	14	17	10	10	45 31	45 ...	45 ...	24	45	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	2	21	15	3	...	...	...	...	...	...
896	1,199	1,553	112	676	1,327	1,191	121	1504	336	306	1,475	1,178	786

**BUREAU OF EPIDEMIOLOGY.**

B. ANANTHASWAMI RAO, B.Sc., M.B.B.S., M.P.H.,

*Superintendent.*

The Superintendent visited 46 places in the quarter under report in connection with cholera control, malaria survey, vaccination inspection and inspection of malaria stations, etc.

Mr. Carter of the Rockefeller Foundation visited, with the Consultant in Health, the malaria stations at Bangalore, Hiriyur, Nagenhalli and Mandya.

**(a) Malaria Stations.**

Anti-malaria work in the study stations was continued as usual. The quarterly spleen and parasite surveys were made in January in all the three areas.

*Nagenhalli.*—The spleen rate and the parasite rate for Nagenhalli and Farm were 25·0 and 7·6, compared with 23·3 and 4·7 respectively in the corresponding quarter of the previous year. Results of experiments for finding the effect of Paris Green on paddy crops have been analysed and the paper is under publication.

*Mudgere.*—The spleen and parasite rates for Mudgere town were 32·4 and 1·8 as against 18·1 and 2·2 respectively for the corresponding quarter of the previous year. The working of the control measures was satisfactory. A proposal for converting the malaria station into a rural health unit is under consideration. The staff of the station will then be adequately increased and malaria control in the town will be only one of the activities of the unit, under the direct supervision of one of the Assistant Sanitary Inspectors, the Health Officer in-charge attending to general sanitation of the proposed unit area.

*Hiriyur.*—The control of malaria in Hiriyur Town continued to be still unsatisfactory. It has not yet been possible to effectively control the breeding of the carrier anophelines in the river bed and some of the paddy fields



adjoining the Vaddar lines. It is proposed to try uprooting of the dense growth of coarse grass in the river bed by using elephants, so as to make the entire breeding surface easier of access for dusting Paris Green.

Owing to some unavoidable delay in getting fresh stock of Paris Green the control measures had to be stopped for one full month in January. There has been an increase in malaria morbidity during the quarter and the extent to which the stoppage of control measures was responsible for this increase is being investigated.

The examination of children under one year was repeated during the quarter and will be done again during the remaining quarters of the year, and it is expected that it will be possible to further confirm the actual transmission seasons in this area.

The officer-in-charge of the Station was on deputation to different places in Northern India for collecting specimen of anopheline carriers in the last month of the quarter, under Government Order No. G. 6529-30—P. H. 36-2, dated 27th February—1st March 1937.

As the officer could not examine the blood smears taken during the quarter, they are under examination in the Central Laboratory and the figures for Hiriyr will be published in the next quarter.

*Irwin Canal Area.*—The control work in the 10 villages was continued during the quarter and the examination of the blood smears was completed. The spleen and parasite rates computed in the October survey show that the downward trend is being satisfactorily maintained while in the four comparative villages the rates are either stationary or are on the increase.

*Mandya and Bhadravati.*—The malaria control work in Mandya Town and Bhadravati Works Colony are reported to be satisfactory. In Mandya the arrangement requiring the clerk of the Malaria Unit to supervise the anti-malaria work in the town was found to be unsatisfactory and the supervision was transferred to the clerk, Rural Health Unit, who has been trained in malaria work and besides has no other executive work.

*Bangalore City.*—The mosquito control work in the City was continued during the quarter. In addition to weekly oiling of all the breeding places the staff attended

to cleaning the drains, cutting the margins and clearing vegetation in the tanks. The total anophelines caught during the quarter were 83 as against 67 during the corresponding quarter of the previous year.

The supervising staff inspected 3,081 wells and re-stocked fish in 2,990 wells.

Consignments of larvicidal fish were supplied to the Village Improvement Committee, Uppini Betegeri, Dharwar and to Gokak Falls from the City Nurseries.

*Mysore City.*—Mosquito control work was started in the City during the quarter. Malariol is being used as the larvicide. The work is still under the supervision of Assistant Sanitary Inspectors and the full supervising staff recommended has not been appointed.

#### (b) Central Laboratory.

The study of *A. stephensi* was continued during the quarter. One colony of *A. stephensi* from Mysore has been successfully established. Observations are also being made on the number of eggs laid by each mosquito and also the time taken for the completion of developmental stages of the anopheline at the prevailing atmospheric temperature. In addition a study of *A. culicifacies* was started during the quarter.

#### (c) Spleen Surveys.

*Markonhalli Dam Construction.*—The proposed construction site and the lay out of the sites for the superior staff and the coolies were surveyed in March and the following recommendations have been made:—

1. Prophylactic treatment of the entire population of the colony and all new arrivals as they enter the colony from time to time.
2. Anti-larval measures to keep down the anopheline breeding at a cost of Rs. 1,800.
3. The proposed site for housing the coolies on the bank of the river to be shifted to a more suitable spot at least two furlongs away along the river margin.

*Hassan.*—A rapid survey of Hassan Town was made for locating the breeding places of mosquitoes with a view



to suggest measures for mosquito control. The places where heavy breeding was found were:—

1. Sullage water from houses,
2. Wells and ponds in the garden area opposite the Travellers' Bungalow,
3. Three big ponds next to the Travellers' Bungalow,
4. Public disused cement concrete cisterns,
5. Wells,
6. Tanks.

It was pointed out that with the provision of a proper drainage system a large percentage of the mosquito nuisance would disappear and till such time, it was recommended that systematic oiling of breeding places should be arranged at a cost of Rs. 6,000 a year.

#### (d) Hookworm Campaign.

The hookworm unit continued to give treatment in the Periyapatna Sub-taluk during the first half of the quarter. They visited 64 villages for the second and in some cases for the third time and out of a population of 23,312 succeeded in treating 2,367.

An organised bore-hole latrine campaign for the villages was also started in this area during the quarter, and a big attempt will be made for putting in as many bore-hole latrines as possible in each village.

During the second half of the quarter the treatment party was shifted from Periyapatna Sub-taluk to the adjoining heavily infected Krishnarajpet Taluk. During the rest of the quarter the party visited 29 villages and treated 2,626 people out of a population of 12,749.

#### (e) Guineaworm Unit.

The field staff visited 191 villages during the quarter. During their visits they examined 120 wells, chlorinated 37, re-stocked 14 with fish and newly introduced fish in 69. They established seven new nurseries in hobli head-quarter towns.

#### (f) Control of Epidemic Diseases.

*Small-pox.*—The Superintendent visited Chiknaikanhalli, Mallenahalli, Marasandra Palya, Turuvekere, Devihalli, Kadehalli, Yediyur and Kunigal in connection with the verification of vaccination and investigation of potency

of certain numbers of vaccine lymph supplied by the Vaccine Institute.

*Cholera.*—During the quarter a fairly extensive prevalence of the disease was reported with 1,845 attacks and 992 deaths. Mysore district was the worst affected with 133 villages reporting infection and having 1,009 attacks and 573 deaths. Control measures were immediately organised with a special staff sanctioned by Government for the purpose. In Mysore District alone 1,12,492 anti-cholera inoculations were performed.

As a preventive measure shandies and jatras were stopped under the orders of Government in and about the infected localities. The following were the jatras prohibited:—

District	Taluk	Village	Name of jatra
Mysore ...	Nanjangud ...	Nanjangud ...	Dodda Jrtra
		Kalale ..	Sri Lakshmikantaswami Jatra
	Mandya ...	Mandya ...	Sri Kalamma's Jatra
			Sri Janardhanaswami Jatra
	Maddur ...	Maddur ...	Sri Narasimhaswami Jatra
	Malvalli ...	Sivasamudram	Sri Someswaraswami Jatra
	Seringapatam ...	Thoranur ...	Sri Narasimhaswami Jatra
	Yelandur ...	Yelandur ...	Sri Biligiri Rangaswami Jatra
	T.-Narsipur ...	T.-Narsipur ...	Sri Agastyeswaraswami Jatra
		Talkad ...	Sri Vaidyeswaraswami Jatra
		T.-Narsipur ...	Sri Gunjanarasimhaswami Jatra
	Krishnarajnagar.	Krishnarajnagar	Kapadi Jatra
	Gundlupet ...	Havinad ...	Sri Gopalswami Jatra
Bangalore.	Anekal ...	Mayasandra ...	Sri Mutyalamma's Jatra
		Anekal ...	Sri Thimmarayaswami Jatra
		Huskur ...	Sri Mudduramma Jatra
	Channapatna ...	Mallurpatna ...	Sri Chamundeswari Jatra
		Hunsanahalli ...	Sri Beelammadevaru Jatra
	Closepet ...	Closepet Town.	Sri Ramadevaru Temple Jatra
	Bangalore ...	Agaram ...	Sri Srinivasaswami Jatra
Kolar ...	Kolar ...	Kolar ...	Sri Vanarasi Jatra and Cattle Fair



TABLE 1.  
*Spleen and Blood Examinations made in the Experimental Malaria Stations\*.*

Spleens	0-9			10-19			20 and over			All ages		
	No. Ex.	No. Inf.	% Inf.	No. Ex.	No. Inf.	% Inf.	No. Ex.	No. Inf.	% Inf.	No. Ex.	No. Inf.	% Inf.
Spleen not Examined ...	...	...	...	...	...	...	...	...	...	...	...	...
Spleen Negative ...	142	8	5.6	25	...	...	3	...	...	177	8	4.5
Palpable ...	17	1	5.9	7	1	14.3	3	...	...	27	2	7.4
1 ...	12	...	...	5	...	...	1	...	...	18	...	...
2 ...	6	1	16.7	6	...	...	...	...	...	12	1	8.3
3 ..	1	...	...	1	...	...	...	...	...	2	...	...
4 ...	2	...	...	...	...	...	...	...	...	2	...	...
5 ...	1	...	...	...	...	...	..	...	...	1	...	...
All persons with palpable Spleen.	40	2	5.0	19	1	5.3	4	...	...	63	3	4.8
Grand Total—All Spleen ...	182	10	5.5	44	1	2.3	14	...	...	240	11	4.6
2* Spleen Rate ...	182	40	22.0	44	19	43.2	14	4	28.1	240	63	26.3

\* Hiriyr figures are omitted as they are not ready.

TABLE 2.  
*Adult Catches in Control and Peripheral Areas.*

Species	Nagenhalli		Mudgere		Hiriyur		Nagoonhalli	
	Pd. zn.	Pl. zn.	Pd. zn.	Pl. zn.	Pd. zn.	Pl. zn.	Pd. zn.	Pl. zn.
A. aconitus	...	18	...	4	107	27	2	...
A. aitkenii	...	...	...	...	...	...	...	...
A. annularis	...	162	...	...	...	...	...	...
A. barbirostris	...	...	...	...	...	...	...	...
A. culicifacies	...	150	...	...	...	...	...	...
A. fluvialilis	...	112	...	...	...	...	...	...
A. hyrcanus	...	...	...	...	...	...	...	...
A. jamesii	...	14	...	...	...	...	...	...
A. jeyporiensis	...	7	...	...	...	...	...	...
A. karwari	...	...	...	...	...	...	...	...
A. lencosphyros	...	...	...	...	...	...	...	...
A. maculatus	...	...	...	...	...	...	...	...
A. minimus	...	...	...	...	...	...	...	...
A. majidi	...	...	...	...	...	...	...	...
A. pallidus	...	4	...	...	...	...	...	...
A. splendidus	...	1	...	...	...	...	...	...
A. stephensi	...	1	...	...	...	...	...	...
A. subpictus	...	9	...	...	...	...	...	...
A. tessallatus	...	...	...	...	...	...	...	...
A. turkudi	...	...	...	...	...	...	...	...
A. vagus	...	...	...	...	...	...	...	...
A. vampa	...	...	...	...	...	...	...	...



TABLE 3.  
*Species of Malaria Parasites.\**

Age	Nagenhalli						Mudgere						Hiriyur*					
	Total No. Inf.			B. T.			M. T.			Q.			Total No. Inf.			B. T.		
	No. Inf.	% Inf.	No. Inf.	No. Inf.	% Inf.	No. Inf.	No. Inf.	% Inf.	No. Inf.	% Inf.	No. Inf.	% Inf.	No. Inf.	% Inf.	No. Inf.	No. Inf.	% Inf.	% Inf.
1	2		3	4	5	6	7	8	9	10	11	12	13	14	15			
0-9	9		2	22.2	6	66.6	1	1.11	1	...	...	1	100.0	...	...			
10-19	...		...	...	...	...	...	...	1	...	...	1	100.0	...	...			
20 and Over	...		...	...	...	...	...	...	...	...	...	...	...	...	...			
All ages	9		2	22.2	6	66.6	1	1.11	2	...	...	2	100.0	...	...			

\* Hiriyur figures are omitted as they are not ready.

## BUREAU OF LABORATORIES.

### (a) Public Health Institute.

C. V. NATARAJAN, B.Sc., M.B.B.S., Dr.P.H.,  
*Superintendent.*

*Bacteriological Section.*—In the quarter under report 2,492 specimens were examined in the Bacteriological Section, as detailed below :—

No.	Particulars	Positive	Negative	Total
1	Aerated Waters ...	...	...	9
2	Blood for M. P. ...	...	1	1
3	Do Cultural examination.	...	...	1
4	Do Wassermann reaction.	356	1,207	1,563
5	Do Widal test ...	23	18	41
6	C. S. F. ...	...	...	1
7	Fluid ...	...	...	1
8	Motion for B. Coli ...	1	...	1
9	Do Cholera ...	55	28	83
10	Do Ova ...	1	4	5
11	Nasal smear for L. B. ...	...	1	1
12	Rat's smear for B. pestis ...	...	1	1
13	Smear for G. C. ...	3	1	4
14	Sputum for T. B. ...	3	5	8
15	Throat smear for Diphtheria ...	1	20	21
16	Urine ...	...	...	5
17	Vaccine from Vaccine Institute.	...	...	46
18	Vomit for Cholera ...	7	12	19
19	Water ...	...	...	665
20	Water for cholera ...	...	15	15
21	Water for cyclopes ...	...	1	1
Total ...		450	1,314	2,492



*Chemical Section.*—A total of 679 specimens were examined in the Chemical Section.

No.	Item	January to March 1937
1	Aerated water ... ..	4
2	Blood sugar estimation ... ..	1
3	Deposit of copper sample ... ..	1
4	Effluent ... ..	1
5	Ghee ... ..	3
6	Light Caoutchoucine ... ..	1
7	Milk ... ..	1
8	Opium ... ..	1
9	Pyridine ... ..	1
10	Sewage ... ..	3
11	Sodium Arsenite ... ..	2
12	Vino Malt ... ..	1
13	Wash ... ..	4
14	Water for potable purposes ... ..	13
15	Water for Residual chlorine ... ..	639
16	Wood Naptha ... ..	3
Total ...		679

*Medico-legal Section.*—During the quarter 59 cases were received for examination. Of these 42 cases with 155 articles were examined and reported upon.

No.	Particulars	No. of cases	No. of articles
1	Abortion ... ..	3	17
2	Mammalian Blood ... ..	22	76
3	Rape ... ..	2	3
4	Suspected human poisoning ... ..	15	59
Total ...		42	155

Ammonium chloride was detected in 1 case.  
Cannabis Indica was detected in 1 case.  
Copper do do  
Copper sulphate do do  
Dhatara do do  
Mammalian blood do in 14 cases.

*Vaccines.*—During the quarter 3,04,310 doses of cholera vaccine and 854 doses of T.A.B. vaccine were issued.

*Fees received.*—The fees received at the Institute amounted to Rs. 874-11-0 under:—

	Rs.	a.	p.
1. Bacteriological examination	..	35	0 0
2. Chemical do ...	...	105	0 0
3. T. A. B. Vaccine ...	...	81	4 0
4. Cholera Vaccine ...	...	653	7 0

**(b) Vaccine Institute.**

J. A. ISWARAMURTHY, B.A., L.M.S., B.S.SC.,

*Superintendent.*

Chloroformed glycerine lymph was issued for general use and only potent lymph found free from pathogenic organisms was issued. Sixty-seven samples were examined bacteriologically 203 times and their potency was tested in serial dilution on the rabbit and clinically in the Model Range.

Percentage success in primary vaccination was 92·0 in the Rural Health Unit, Mandya, and 90·4 in Bangalore City.

The following is a summary of work done at the Institute:—

<i>Particulars</i>	<i>Quarter Jan.—Mar. 1937</i>	<i>Quarter Oct.—Dec. 1936</i>
I. (a) Calves available for vaccination.	55	54
Calves waiting at the beginning of quarter.	10	12
Calves replaced ...	...	...
Calves purchased ...	45	42
Calves that died ...	...	...
Calves waiting at end of quarter.	10	10
II. (b) Calves vaccinated	45	43
Vaccinated calves waiting at beginning quarter.	...	2
Vaccinated calves rejected...	4	5
Do that died.	...	...
Do waiting at end of quarter.	1	...
III. (c) Calves whose pulp was collected.	40	4



<i>Particulars</i>	<i>Quarter Jan.—Mar. 1937.</i>	<i>Quarter Oct.—Dec. 1936.</i>
II. <i>Glycerine Lymph.</i> —		
Quantity produced ...	1,87,520 cases	1,53,150 cases
Quantity remaining at beginning of quarter.	2,96,060 „	2,08,145 „
Quantity issued including wastage and tests, seed etc.	1,20,320 „	1,32,385 „
Quantity remaining at end of quarter.	3,63,260 „	2,28,910 „

*Income and Expenditure.*—

Income including arrears.	Rs. 6,947	Rs. 1,612
Expenditure ...	Rs. 4,290	Rs. 5,509

*Training.*—

Number of candidates trained.	...	10
Number of candidates granted certificates.	...	10

**BUREAU OF HEALTH EDUCATION.**

E. ANANTHA RAO, B.SC., M.B.B.S., D.P.H.,

*Superintendent.*

In connection with the spread of cholera into the Kankanhalli Taluk from the Mahadeshwarabetta Jatra in Kollegal Taluk, the Superintendent was placed on special duty for preventive inoculation and for organising control measures.

As part of health propaganda work 54 cinema demonstrations were organised for a total approximate audience of 40,000 persons. The departmental van conveyed, as usual, the cinema staff and equipment and travelled a distance of 1,905 miles.

Of these 54 shows, 21 were given in connection with the annual jattras and cattle shows, 11 on the occasion of the Health and Baby Week celebrations, and 14 in selected places in Bangalore, Kolar and Mysore Districts. Eight shows were held in Bangalore City.

The following is the list of place where cinema shows were given :—

	<i>Name of Place</i>			<i>No. of shows</i>
1.	Hassan in connection with Cattle Fare and Jatra ...			3
2.	Sivaganga	do	do ...	2
3.	Ghatisubrahmanya	do	do ...	2
4.	Mahadevapura	do	do ...	2
5.	Thoranahalli	do	do ...	3
6.	Hemagiri	do	do ...	2
7.	Mudukatore	do	do ...	3
8.	Devanhalli	do	do ...	2
9.	Avani	do	do ...	1
10.	Melkote	do	do ...	1
11.	Mysore City in connection with Health and Baby Week.			7
12.	Civil and Military Station, Bangalore, in connection with Health and Baby Week.			2
13.	Nanjangud in connection with Health and Baby Week.			2
14.	Bangalore City	...	...	8
15.	In selected parts of Bangalore, Kolar, and Mysore Districts.			14
	Total			54

Health exhibitions on a small scale were organised in the following places in connection with the Health and Baby Weeks, and Jatras and Cattle shows:—

- |                                    |                  |
|------------------------------------|------------------|
| (1) Hassan.                        | (4) Thornahalli. |
| (2) Sivaganga                      | (5) Mudakatore.  |
| (3) Ghatisubrahmanya.              | (6) Nanjangud.   |
| (7) Krishnarajendra Mills, Mysore. |                  |

Eight articles on health subjects were issued for publication in the local English and Kanarese papers.

Departmental posters, leaflets and pamphlets on health subjects were distributed as shown below:—

<i>Particulars</i>	<i>No. of copies distributed.</i>	
	<i>Jan.—Mar.</i>	<i>Oct.—Dec.</i>
	1937	1936
1. Posters on Bore-hole latrines in Kanarese.	6	11
2. Leaflets on Plague, Small-pox, and Soil-Pollution, in English and Kanarese	...	5,757
3. Posters on Malaria, Water, House-Fly and Filth Diseases in English, Kanarese and Urdu	...	124
Leaflets on the above subjects	...	7,772
4. Posters on Fruits and Vegetables in English, Kanarese and Urdu	...	9,657
5. Posters on Consumption in English, Kanarese and Urdu	...	10,319
6. Picture pamphlets on Hookworm disease...	30	109
7. Leaflets on cholera in Kanarese	...	11,500



## BUREAU OF RURAL HEALTH.

### (a) Health Training Centre, Closepet.

T. CHANDRASEKHARAIYA, B.A., M.B.B.S., M.P.H.,  
*Health Officer.*

Three Public Health Nurses and four Midwives in addition to the two Nurses and two Midwives that were already on the staff joined duty during the quarter. Two of the Nurses who had been deputed to Ceylon for training in public health work reported themselves for duty after training in the beginning of January, and the third, an untrained Nurse, reported herself for duty towards the end of January and is now under training in the Unit. The Nurse who was under training during the last quarter was given independent charge and posted to Mattikere Division. The new Midwives reported themselves for duty towards the end of February.

The staff-quarters that were under construction at the end of the last quarter were completed during the quarter and these have been occupied by the staff. Two quarters for midwives now remain to be constructed.

During the quarter attacks and deaths from the following diseases were recorded :—

			<i>Attacks</i>	<i>Deaths</i>
Plague	...	...	...	...
Small-pox	...	...	...	...
Cholera	...	...	36	22
Malaria	...	...	46	0
Enteric Fever	...	...	11	2
Dysentery and Diarrhoea	...	...	73	9
Measles	...	...	16	7
Chicken-pox	...	...	2	0
Whooping-cough	...	...	...	...
Pulmonary Tuberculosis	...	...	2	2

A small outbreak of cholera resulting in 36 cases and 22 deaths occurred. The infection was introduced from two sources. In the beginning it was brought from Mudukathore Jatra and cases were reported from two

villages *viz.*, Vodakehosahalli in 'C' Division and Kallihosur in 'E' Division. In the former the infection spread slightly, 11 indigenous cases with 4 deaths being reported. Later the infection was brought by pilgrims who returned from Mahadeshwara Jatra in Coimbatore District. A total of 4,427 anti-cholera inoculations were done in the infected villages, and 78 houses were disinfected.

*Vaccination.*—Intensive vaccination work was carried on in the whole area and the progress of work was fairly satisfactory, as many as 6,210 vaccinations having been done during the quarter.

*Births and Deaths.*—According to programme all the villages were visited by the Sanitary Inspectors every month, during the second week, for the collection of vital statistics and to check the Patel's birth and death registers. Out of a total of 564 births in the area 85 (or 15 per cent) and of 303 deaths 50 (or 16·5 per cent) had escaped registration. In the previous quarter 25·8 per cent of births and 20·5 per cent of deaths had escaped registration. There is, therefore, a noticeable improvement in the registration showing that periodical checking improves the completeness of registration. Lists of detected births and deaths are now being sent to the Revenue Sub-Division Officer in order that steps may be taken to see that the Patels exercise more care in registering the vital occurrences.

*Water Supply.*—As a step in safeguarding drinking water supplies in the villages, an attempt has been made to popularise "Lift-Pumps." A new type of pump which is cheap, simple and durable and which has been recently perfected locally in the Bangalore Industrial Workshop has been introduced into Voderahalli for the purpose of demonstration and it has been working satisfactorily for the last two months. Government have sanctioned four more pumps free of cost to be introduced into villages in toher divisions also for purposes of demonstration.

Nine blood samples were sent to the Public Health Institute for Wasserman re-action; 21 blood smears were examined at the office for malarial parasites; 3 sputum smears for T. B., 3 smears for G. C., 6 samples of stools for ova and 14 urine samples were examined at the office laboratory.

Four samples of excreta from suspected cholera cases were sent to Public Health Institute for bacteriological



examination and in all these it was reported that cholera like vibrios were isolated.

The brain of a dog suspected to be suffering from rabies was sent to the Serum Institute through the Local Veterinary Inspector for examination and it was declared positive for rabies.

*Consultation.*—During the quarter 28 patients turned up at the office for consultation. After examination they were given needful advice.

*House Survey.*—During the quarter 1,955 houses were surveyed against 1,857 in the previous quarter.

*Health Talks.*—The Inspectors gave 681 visits to their villages and gave 2,079 talks on health subjects to approximately 30,000 persons, as compared with 583 visits, 2,177 talks and 22,000 persons respectively in the previous quarter.

*Chlorination.*—All the drinking water wells and step wells and as many of the non-drinking water sources as possible were chlorinated according to a routine. Special attention was given to the villages in the cholera infected zone and the drinking water sources in these places were chlorinated more than once during the period.

*Maternity and Child Welfare.*—The Monday and Friday clinics at Closepet were held regularly. During the quarter 21 clinics at which 65 pre-natals, 94 infants, and 182 pre-school children attended. In spite of repeated visits and talks at home the women folk are still shy to attend the clinics and it takes some time for them to get used to the new ideas.

The nurses, during their home visits, examined and registered 1,248 pre-natals, 1,834 infants and 2,437 pre-school children, and visited 6,470 homes during the quarter. They also examined 145 samples of urine.

*Midwives.*—The midwives attached to the Unit conducted 87 deliveries in the quarter under report. Of the 57 cases conducted in the Closepet Division 54 were among previously registered cases and three among unregistered cases. In this division 50 per cent of the deliveries were conducted by the Unit midwives, as compared with 47·6 per cent in the previous quarter.

Post-natal visits were paid by the midwives, 514 in number, giving an average of 5·8 visits per case as against 4·1 in the previous quarter.

*Cyanogas.* As an experiment destruction of rats through Cyanogas was tried in three villages. No special



staff was employed for this purpose. The Sanitary Inspector and his servant did the work with the help of the village people. The burrows in the floor and in the walls were treated with Cyanogas. It was reported that the rat nuisance was minimised a good deal during the first few days after the operation, but in about a week's time the trouble returned to its old level. This was what was expected as the roofs in these country tiled and thatched houses harbour quite a large proportion of the rats and practically all of them were left untouched. The experiment will have to be done more systematically and the results studied before any opinion can be given. A special staff would be necessary to carry on this experiment, since the time of the existing staff is already fully occupied. It was found that with one pump and one servant it was possible to gas not more than 15 houses in a day, provided the house-holders assisted the staff in clearing their houses.

*Health Leagues.*—In order to improve the sanitation of the villages it was thought advisable to enlist the co-operation of the people themselves and make them not only appreciate the importance of the improvements but also make them realise that if they take on the responsibility to carry out the works, the accomplishments are speedier, better and more permanent. The Sanitary Inspectors were asked to select co-operative villages in the area where 'Health Leagues' on the lines organised in Ceylon, could be started. The Office bearers are selected from among the influential and enthusiastic people in the villages. Although the suggestions and ideas are given by the Sanitary Inspectors the responsibility of carrying them out lies entirely with the Chairman and Members of the League, and the Sanitary Inspector himself remaining in the back-ground watching, suggesting and correcting.

The activities expected of these Leagues are for the present: (i) providing latrines of a standard type for individual houses, (ii) introduction of windows, (iii) white-washing of houses, (iv) improvement of the flooring of houses, (v) improvement of the cattle sheds, (vi) removal of manure pits away from the village houses, (ii) improvement of water supply, and, in general, (viii) the cleanliness of the village. The league has been formed in the two villages of Archagarahalli and Vodaraguppe.



**(b) Rural Health Unit, Mandya.**

M. NARAYANA IYENGAR, L.M.P.,

*Officer-in-charge.*

*Vital Statistics.*—During the quarter 107 births and 46 deaths were verified and 49 births and 44 deaths were detected by the Unit staff, as compared with 94 births and 43 deaths verified and 89 births and 11 deaths detected in the previous quarter.

*Epidemic Diseases.*—Eleven attacks with 5 deaths from plague were reported from 3 villages as against 26 attacks with 13 deaths during the previous quarter. As a preventive measure 344 anti-plague inoculations were performed.

Eight (8) attacks with no deaths from small-pox were reported from 4 villages in the Unit area and 579 primary and 309 re-vaccinations were done. The success rates in primary and re-vaccinations were 95·2 and 44·7 respectively.

During the quarter as many as 42 villages in the Unit area were infected with cholera and a total of 316 attacks with 170 deaths were reported. All the infected villages were visited and preventive measures were taken in time to check the spread of the disease. A total of 21,749 anti-cholera inoculations were performed during the quarter in the Unit area.

The Unit staff visited villages outside the Unit area also and did 5,848 anti-cholera inoculations.

*Propaganda.*—A total of 771 leaflets on “Cholera” were distributed. The staff gave during their rounds 871 talks to about 8,000 persons.

*Clinics.*—Six clinics were held during the quarter at which 35 persons were examined and advised.

*Midwives.*—The two midwives attached to the Unit paid 145 visits to 26 villages. They paid 794 pre-labour, 118 post-labour and 23 miscellaneous visits. They conducted 11 labour cases. A total of 873 cases have come under their care.

*Laboratory.*—One sample of sputum for T. B., 25 blood smears for M. P., and 2 spleen smears from dead rats for B. P., were examined. One sample of blood for Wassermann re-action and 13 samples of motions in peptone water for cholera vibrios were examined for the Unit at the Public Health Institute.

*Chlorination.*—The Unit staff was mostly engaged in cholera epidemic work during the quarter. As many as 480 drinking water wells were chlorinated.

*Dog Destruction.*—Only one dog which was suspected to be rabid was destroyed in Mandya Town.

*Miscellaneous.*—Fourteen papers relating to health matters were disposed of during the quarter.

The Sweeping staff, which had been kept vacant, were entertained during the quarter. They were divided into three batches of 3 each and posted to three divisions. The sweepers were engaged in tidying up the villages.

Forty new soak pits were put up during the quarter to prevent sullage water flowing into the streets.

A mechanic was deputed to the Unit during the quarter to demonstrate the method of preparing cement squatting slabs and to putting up bore-hole latrines. The squatting slabs were prepared at Mandya and Alkere.

Two bore-hole latrines at Sathnur and one at Alkere were completed during the quarter, and 6 bore-hole latrines at Alkere are under construction.

## BUREAU OF SANITARY ENGINEERING.

B. R. GARUDACHAR, B.A., C.E., M.I.E.,  
*Sanitary Engineer.*

For the sake of convenience the Bureau has been divided into five sections :—

- (1) Water supplies including original construction works and annual maintenance of existing installations all over the State excepting Bangalore City,
- (2) Drainage works throughout the State,
- (3) Sanitary Fittings including house connections and bore-hole latrines,
- (4) Town planning schemes, and
- (5) Deep bore-wells for supply of protected water supplies in towns and minor municipalities.

### 1. WATER SUPPLY.

Forty-seven towns have been provided with water supply. To this list three more towns *viz.*, Whitefield, Chikballapur, and Viduraswatha, which have been provi-



ded with water supply, have been added during this quarter. Of these 50 installations, the Bureau is maintaining the water supply of 11 towns including Mysore, Kolar Gold Fields and Shimoga. The works under progress are listed in the statement appended.

## 2. DRAINAGE.

Comprehensive schemes for providing drainage for (a) Chikballapur, (b) Closepet, (c) Maddur, (d) Saklespur, (e) Hunsur and (f) Channāpatna were prepared during the quarter.

Part schemes for constructing drains in Chennarayapatna and Jagalur towns have been prepared and forwarded.

An estimate for constructing sub-soil drains in Shimoga Town was prepared and forwarded.

Drainage works under progress are listed in the appended statement.

## 3. SANITARY FITTINGS AND BORE-HOLE LATRINES.

Repairs and maintenance works to the sanitary installations of Government Buildings in Mysore and Bangalore Cities were attended to. Other works under progress are listed in the statement appended.

One hundred and thirty-six new bore-hole latrines were constructed in the Mysore District in village areas.

## 4. TOWN PLANNING.

Surveys for extensive rural improvements were made in the two villages of Dodmalur and Chikmalur in the Closepet Health Training Centre.

Thirteen miscellaneous improvement proposals for shandy maidans, extension lay-out plans, village and town extensions and treatment of road-crossings were prepared and forwarded to the Municipalities.

## 5. BORE-WELLS.

During the quarter the construction of 13 bore-wells was started. Of these 8 wells are completed and the rest are under progress.

*List of places where works are under progress in various stages.*

No.	Place	Amount of Estimate in rupees	Out-lay to the end of March 37 in rupees	Remarks
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(1) WATER SUPPLY.

1	Chintamani ...	24,806	20,290	
2	Closepet ...	25,850	18,450	
3	Kunigal ...	10,688	6,126	
4	Dodballapur ...	2,750	...	Completed, out-lay not booked.
5	Nandi Jatra ...	5,000	5,121	Completed.
6	Whitefield ...	19,821	13,628	Do
7	Chikballapur ...	3,930	1,930	Do
8	Vidhuraswatha Jatra	2,930	.	Completed ; out-lay not booked.
9	Davangere ...	1,99,000	18,094	
10	Jagalur ...	2,700	1,300	
11	Chitaldrug ...	12,930	15,650	
12	Mandya ...	61,875	8,864	
13	Ganjam ...	19,988	12,074	
14	Arsikere ...	33,110	24,858	

(2) DRAINAGE.

1	Bangalore ...	2,61,385	1,96,168	
2	Chamarajnagar ...	10,400	1,554	
3	Banavar ...	4,028	...	Under progress.
4	Tarikere ...	20,000	13,172	Completed.
5	Dodballapur ...	6,250	...	Under progress.
6	Chintamani ...	3,000	...	Started.
7	Goribidnur ...	6,854	...	Do
8	Channapatna ...	1,000	1,185	Completed.

(3) SANITARY FITTINGS.

1	Sanitary Installation of <i>Dharmapravarta</i> Sajjan Rao's Obstetric Isolation Hospital.	6,258	4,450	Completed.
2	New Mental Hospital	14,600	...	To be started.
3	Central College Home	1,945	...	Nearing completion.
4	Telephone exchange ...	1,560	..	Under progress.
5	Victoria Hospital ...	219	...	Completed.
6	Maharaja's College Hostel Warden's Quarters at Mysore.	760	...	Do



No.	Place	Amount of Estimate in rupees	Out-lay to the end of March 37. in rupees	Remarks
7	New Railway Offices...	4,200	...	Under progress.
8	New Electrical Offices	472	381	Completed.
9	Race Camp, Mysore ...	160	...	Do
10	Maharani's Women's Hostel.	535	501	Do
11	Railway Central Workshops.	6,850	...	Under progress.
12	Maternity and Child-welfare Building, Nanjangud.	330	...	Completed.
13	Sri Narasimharaja Hostel, Kolar.	7,000	2,073	Under progress

### BUREAU OF VITAL STATISTICS.

E. R. SUNDARARAJAN, M.A. (Hons.),  
*Superintendent.*

In connection with the work of the Mysore Committee on Vital Statistics, the Superintendent was deputed under Government Order No. G. 4898-900—P. H. 86-35-9, dated January 12—16th, 1937, to make enquiries into the manner in which the statistics corresponding to those under enquiry were prepared in the Presidency of Madras.

#### (a) Population.

The estimated population of the Districts and Cities as on July 1, 1937, are :—

<i>District or City.</i>	<i>Estimated Population.</i>
Bangalore ...	1,191,051
Chitaldrug ...	709,110
Hassan ...	605,214
Kadur ...	356,753
Kolar ...	885,195
Mysore ...	1,579,879
Shimoga ...	537,480
Tumkur ...	917,706
Total (Mysore State)	6,782,388
Bangalore City...	206,670
Mysore City ...	121,933
Kolar Gold Fields	83,460

## (b) Parturition Statistics.

In the quarter under report 2,613 labour cases were conducted in the 31 Maternity Hospitals and Female Dispensaries. The reported maternal mortality (mortality of mothers at or within 14 days of labour) was 16·46 per 1,000 births as compared with 17·96 in the preceding quarter.

*Parturition Cases conducted in Maternity Hospitals and Female Dispensaries.*

No.	Place	Institutions	Parturition cases conducted	Deaths from Child-birth
1	Bangalore City	... Vani Vilas Hospital	927	10
2	Mysore City	... Do	515	6
3	Do	... Holdsworth Memorial Hospital.	100	1
4	Kolar Gold Fields	... Maternity Hospital	315	4
5	Anekal	... Female Dispensary	3	0
6	Chennapatna	... Do	31	0
7	Chikballapur	... Do	...	...
8	Chikmagalur	... Maternity Hospital	61	4
9	Chintamani	... Female Dispensary	4	...
10	Chitaldrug	... Do	Not Received.	...
11	Davangere	... Maternity Hospital and Female Dispensary.	122	2
12	Hassan	... Female Dispensary and Maternity.	35	0
13	Do	... Red Fern Memorial Hospital.	23	0
14	Hebbal	... Female Dispensary	7	0
15	Hole-Narsipur	... S. N. Maternity Hospital	44	0
16	Hunsur	... Female Dispensary	6	0
17	Kolar	... Female Dispensary	13	1
18	Do	... E. T. C. Memorial Hospital.	32	2
19	Koppa	... Female Dispensary	6	0
20	Krishnarajnagar	... Female Dispensary and Maternity.	40	0
21	Mudgere	... Combined Dispensary	1	0
22	Mandagadde	... Maternity Hospital	9	1
23	Nanjangud	... Female Dispensary	23	...
24	Sagar	... Do	2	0
25	Saklespur	... Women and Children Hospital.	12	1
26	Shimoga	... Maternity Hospital	68	1
27	Sira	... Female Dispensary	5	0
28	Tarikere	... Do	90	4
29	Tiptur	... Maternity Hospital	16	0
30	Tirthahalli	... Do	15	2
31	Tumkur	... Do	88	4
Total (Mysore State)			2,613	43



(c) Epidemic Diseases.

District or City	Population affected	Number of villages affected	Plague		Population affected	Number of villages affected	Small-pox		Population affected	Number of villages affected	Cholera	
			A.	D.			A.	D.			A.	D.
Bangalore ...	2,07,919	3	49	29	2,08,629	3	25	3	2,53,429	65	311	141
Chitaldrug	...	...	...	...	5,815	13	60	8	16,308	24	119	52
Hassan	15,542	7	41	20	...	...	...	...	...	...	...	...
Kadur	...	...	...	...	15,191	3	9	2	4,341	6	11	8
Kolar	1,40,183	69	184	130	88,037	11	102	18	4,962	9	45	30
Mysore	1,33,781	14	62	36	11,855	8	29	4	2,47,816	133	1,009	573
Shimoga	4,872	1	4	1	4,995	6	58	7	67,423	58	337	179
Tumkur	20,714	1	2	0	5,194	10	80	10	1,429	1	13	9
Mysore State	5,23,011	95	342	216	3,39,716	54	363	52	5,95,708	296	1,845	992
Bangalore City ...	2,06,670	...	41	26	2,06,670	...	10	0	2,06,670	..	48	25
Mysore City	1,21,933	...	7	4	...	...	...	...	1,21,933	...	318	164
Kolar Gold Fields	83,460	...	13	6	83,460	...	17	2	...	...	...	...

*Plague.*—A total of 342 attacks and 216 deaths were reported, the district most affected being Kolar. The incidence was more or less normal.

*Small-pox.*—The reported number of attacks and deaths from small-pox were 363 and 52 respectively. The incidence was low.

*Cholera.*—The rise in the incidence of cholera reported in the previous quarter continued during the present quarter also in accordance with the published fore-cast. As many as 1,845 attacks and 992 deaths occurred in 296 villages as compared with 1,467 attacks and 731 deaths in the previous quarter.

The district chiefly affected was Mysore with 1,009 attacks and 573 deaths in 133 villages. Bangalore and Shimoga districts were also affected more or less severely. Hassan District was free.

Bangalore City reported 48 attacks with 25 deaths and Mysore City had 318 attacks and 164 deaths. It has been reported that most of the cases reported from the Cities were cases imported from Mahadeshwara Betta Jatra in Kollegal Taluk of the Coimbatore District.

**(d) Vital Statistics reported for the Previous Quarter  
(October—December 1936).**

*Births.*—During the quarter 35,271 births (excluding 529 still-births) were reported, giving a crude birth-rate of 20·98 per mille of population as compared with 20·63 in the preceding quarter. The rates in the districts varied from 23·27 in Bangalore District to 16·76 in Kadur District.

The average City birth-rate was 41·78 as against 39·06 in the previous quarter. Bangalore City had a rate of 35·48, Mysore City 33·81 and Kolar Gold Fields 68·32.

*Still-births.*—As compared with 547 still-births reported in the preceding quarter 529 still-births were reported during the quarter, giving a still-birth rate of 14·78 per 1,000 births. Of these 529 still-births, 120 were reported from the three Cities.

*Deaths.*—The total number of deaths reported under all causes (excluding still-births) was 26,307, giving a general death-rate of 15·65 per mille of population, as compared with 13·43 in the previous quarter. The rates varied from 28·10 in Shimoga District to 13·00 in Tumkur District.



The average death-rate in the Cities was 29·37 per mille of population, the rates in Bangalore City being 27·80, in Mysore City 26·39 and in Kolar Gold Fields 37·41.

Classified under the 18 Chief Causes the deaths were :—

<i>Cause of Death.</i>		<i>Current Quarter Oct.—Dec. 1936.</i>	<i>Previous Quarter July—Sept. 1936.</i>
1.	Plague ...	602	502
2.	Small-pox ...	391	993
3.	Cholera ...	1,153	161
4.	Malaria ...	8,495	7,110
5.	Typhoid ...	1,396	1,050
6.	Other Fevers ...	3,067	2,627
7.	Dysentery and Diarrhoea	1,892	2,008
8.	Respiratory Diseases ...	1,294	1,123
9.	Consumption ...	1,319	1,156
10.	Leprosy ...	240	208
11.	Child-birth ...	616	546
12.	Suicide ...	78	52
13.	Drowning ...	236	195
14.	Wounds and Accidents...	186	160
15.	Killed by Wild Beasts ...	9	12
16.	Snake-bite ...	54	33
17.	Rabies ...	13	17
18.	All Other Causes ...	5,266	4,628
Total ...		26,307	22,581

The relative magnitudes of the reported deaths under the several causes indicate that the quality of the reporting has been fairly satisfactory. The quantitative defect has yet to be rectified.

*Maternal Mortality (Child-birth).*—The number of deaths from Child-birth reported during the quarter was 616, giving a maternal mortality rate of 17·21 per 1,000 total births as compared with 15·50 in the preceding quarter.

*Infant Mortality.*—In the quarter under report 4,255 deaths were reported of infants under one year of age, giving an infant mortality rate of 120·64 per 1,000 live-births as against 115·93 in the previous quarter. The rates varied in the districts from 185·02 in Shimoga District to 92·07 in Mysore District.

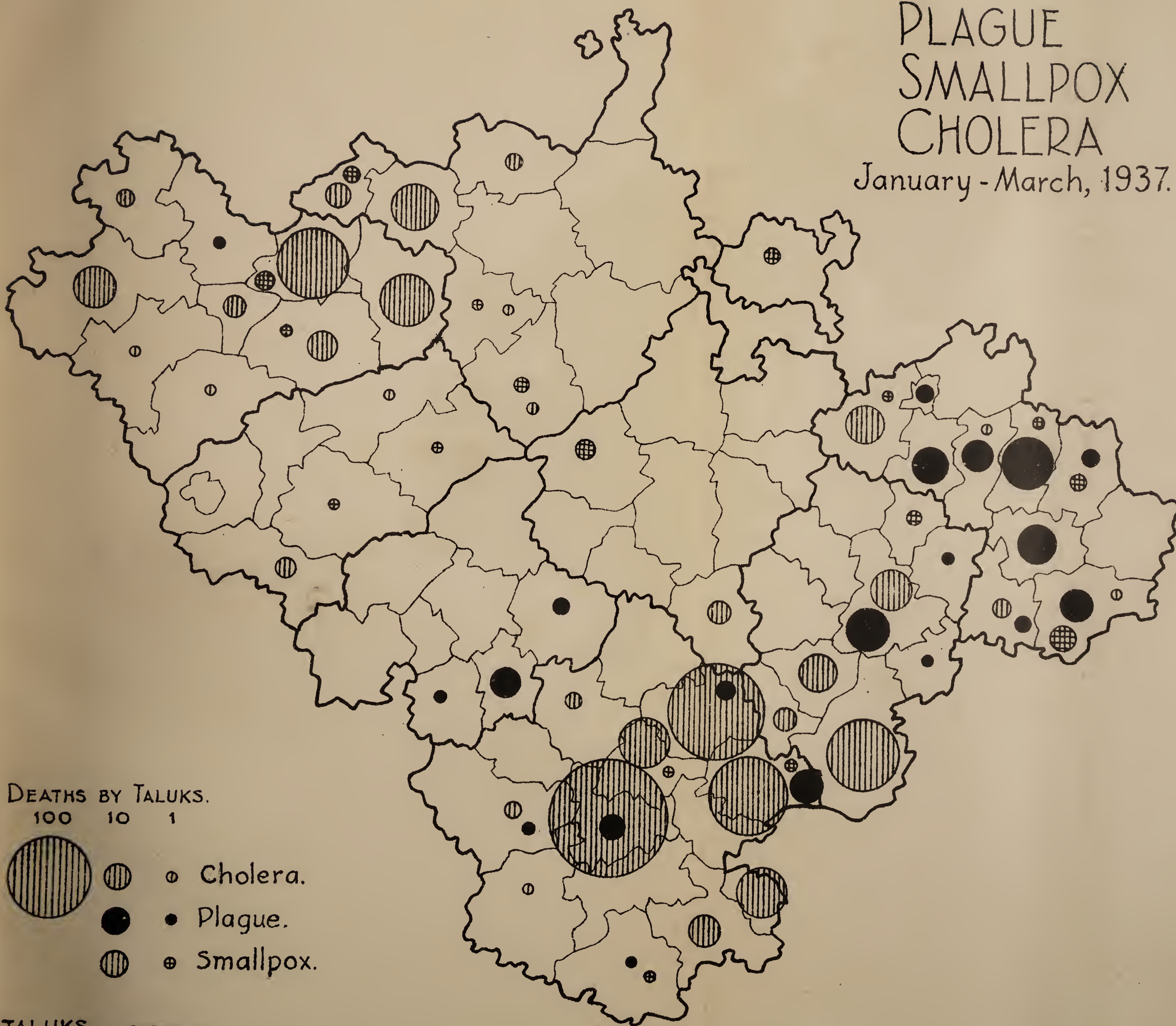
The average City rate was 166·35, as compared with 166·54 in the preceding quarter. Bangalore City had a rate of 160·78, Mysore City 157·27 and Kolar Gold Fields 179·72.





# MYSORE STATE

PLAGUE  
SMALLPOX  
CHOLERA  
January - March, 1937.









## MYSORE STATE DEPARTMENT OF HEALTH.

The following Bulletins are published by Government:—

No. 1. **Report on a Health Survey of Mysore—**

By W. C. SWEET, B.Sc., M.D., Dr.P.H., Field Director, International Health Division, Rockefeller Foundation, Consultant in Health in Mysore, Bangalore, 1928.

No. 2.\* **Report on Tuberculosis in Mysore State—**

By P. S. CHANDRASEKHAR, M.D., sometime Officer-in-charge of Tuberculosis Survey in Mysore, 1928.

No. 3.\* **Report on a Sanitary Survey of the City of Bangalore for the Year 1927—**

By MAHOMED USMAN, L.M.S., (Retired) Senior Surgeon and Sanitary Commissioner, Bangalore, 1928.

No. 4.\* **Guinea-worm Disease in Mysore State—**

By J. V. KARVE, M.B., CH.B., D.P.H., (Retired) Director of Health in Mysore, Bangalore, 1929.

No. 5 **Report of the Delegation of the British Social Hygiene Council (Inc.), to the Government of Mysore, 1929.**

No. 6. **Report on the Present Status of Birth, Death and Epidemic Diseases Reports in Mysore District, Bangalore City and Kolar Gold Fields, with Suggestions for Improvement—**

By E. R. SUNDARARAJAN, M.A. (Hons.), Superintendent, Bureau of Vital Statistics, Bangalore, 1929.

No. 7. **A Survey of Mysore State for Enlarged Spleens and for Hook-worm and other Helminthic Infections—**

By W. C. SWEET, B.Sc., M.D., Dr.P.H., Consultant in Health in Mysore, Bangalore, 1929.

No. 8. **Physician's Pocket Reference to the International List of Causes of Death, 1932.**

No. 9. **Handbook of the Mysore State Department of Health—**

By J. V. KARVE, M.B., CH.B., D.P.H., (Retired) Director of Health in Mysore, Bangalore, 1933.

No. 10. **Notes on Malaria in Mysore State—**

By W. C. SWEET, B. A. RAO and D. NURSING, 1934.

No. 11. **Organic Manure from Street Refuse and Night Soil at Mysore City, India—**

By J. J. MIELDAZIS, B.Sc., C.E., M.A.S.C.E., Former Honorary Sanitary Engineer, 1936.

No. 12. **Periodicity of Cholera in Mysore State—**

By P. Parthasarathy, L.M.S., B.S.Sc., L.R.C.P., L.R.C.S., D.T.M., D.P.H., Director of Health, and E. R. Sundararajan, 1937 (under print).

\* Not available.